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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,740	01/30/2004	Bamidele O. Oyekanmi	9539-000100	6562

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EXAMINER

COMPTON, ERIC B

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/769,740

Applicant(s)

OYEKANMI

Examiner

Eric B. Compton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/6/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 6-11, 12-13, and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 02/078876 to Roeske et al ("Roeske").

Regarding claims 1 and 12, Roeske discloses a method of manufacturing a ring gear (39) including a surface having teeth (6), the method comprising:

defining a negative tooling pattern (66) based on the surface;

providing a tooling set having a bottom die (53) , a top die (52) and an anvil (64), the bottom die being formed with an upper die surface (66) that conforms to the negative tooling pattern, the anvil extending through the bottom die and defining an axis, the bottom die and the top die cooperating to define a die cavity (see Fig. 24);

placing a hollow blank (35) on an anvil and into the die cavity between a top die and the bottom die (see Fig. 21); and

pressing the hollow blank between the top and bottom dies in a pressing direction that is generally parallel to the axis to form the ring gear in single stroke, the hollow blank initially flowing in the pressing direction to substantially completely form the surface of the ring gear and thereafter flowing in a direction generally perpendicular to the pressing direction to thereby fill the die cavity.

Regarding claims 2 and 13, Roeske discloses heating the blank. See Page 12, lines 1-5.

Regarding claims 6 and 17, Roeske discloses forging the article to near-net shape. See Page 11, lines 5-9.

Regarding claims 7 and 18, Roeske discloses the forming the hollow blank such that it conforms to a predetermined volumetric size to thereby control a weight of the forged article. See Page 10, lines 13-15.

Regarding claims 8 and 19, Roeske discloses sectioning a tube shape billet to create the hollow blank. See Page 10, lines 18-19.

Regarding claims 9 and 20, Roeske discloses removing an amount of excess from a second surface of the forged article opposite the surface. See Page 12, lines 18-22 (discussing machining surface 41 opposite the gear surface).

Regarding claims 10 and 21, the hollow blank (35) is clearly ring shaped. See e.g., Figure 21.

Regarding claims 11 and 22, Roeske discloses moving the anvil (64) in a direction opposite the pressing direction to push the forged article away from the bottom die. See Figure 24.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-4 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeske in view of U.S. Pat. 4,856,167 to Sabroff et al ("Sabroff").

Roeske discloses the invention above, and hot forging. See Page 12, lines 1-5. However, the reference does not disclose the forging temperature of 1700 to 1800 degrees Fahrenheit nor re-crystallizing the material while pressing to a ASTM grain size of 7 to 8.

Sabroff discloses a method of forming a gear by hot forging. Like, Roeske a hollow ring shaped billet (20) is places is forged to produce the gear. Sabroff discloses

In a typical example, a billet of AISI 8620A steel, a common low to medium carbon level alloy steel, is heated to a preselected temperature of about 1800 °F. (1255 °K.) to 1900 °F. (1310 °K.). As AISI 8620A steel has a melting temperature of about 2800 °F. (1810 °K.), the resulting HTR is in the range of 0.693 (1255/1810) to 0.723 (1310/1810).

Col. 3, lines 57-63. The homologous temperature ratio (HTR) is defined as the temperature (°K) of the material divided by the melting temperature (°K) of the material.

See Col. 3, lines 35. Sabroff further discloses that

The process has been found to provide good machinability of the precision forgings as the microstructure is a polygonal ferrite and pearlite equiaxed grain with no, or only a minimum of, undesirable Widmanstatten structure. The grain size is generally fine (i.e. less than G.S. No. 10 on the ASTM Scale).

Col. 4, lines 23-29.

Regarding claims 3 and 14, it would have been obvious to one having ordinary skill in the art at the time of invention to have formed the gear of Roeske by heating the blank to a forging temperature of 1700 to 1800 degrees Fahrenheit, in light of the teachings of Sabroff, in order to "provide good machinability of the precision forgings."
Id.

Regarding claims 4 and 15, it would have been obvious to one having ordinary skill in the art at the time of invention to have formed the gear of Roeske by re-crystallizing the material while pressing to a ASTM grain size of 7 to 8, in light of the teachings of Sabroff, in order to "provide good machinability of the precision forgings."
Id. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

5. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roeske in view of U.S. Pat. 5,787,753 to Dougherty.

Roeske discloses the invention above. However, the reference does not disclose coating the hollow blank with a lubricant.

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Dougherty discloses a method of forging a gear with near net shape. The reference teaches

The workpiece can be coated or soaked with a lubricant, such as graphite, which assists in enhancing the flow of metal along the surfaces of tooth die 26, stencil die 30 and stem cavity 84 (e.g., interior surface 85 and recess 83A), which in turn, assists in reducing the possibility that the forged gear 90 will seize to surfaces of the tooth die 26, stencil die 30, or stem cavity 84 after the forging stroke.

Col. 6, lines 47-53.

Regarding claims 5 and 16, it would have been obvious to one having ordinary skill in the art at the time of invention to have formed the gear of Roeske by coating the hollow blank with a lubricant, in light of the teachings of Dougherty, in order to "assist in enhancing the flow of metal" during forging. Col. 6, lines 48-49.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B. Compton whose telephone number is (571) 272-4527. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eric B. Compton
Primary Examiner
Art Unit 3726

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